



Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11324 (1985): Multi-ply paper sacks for carbon black
[CHD 15: Paper and its products]

“ज्ञान से एक नये भारत का निर्माण”

Satyanaaranay Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



BLANK PAGE



PROTECTED BY COPYRIGHT

Indian Standard
**SPECIFICATION FOR
MULTY-PLY PAPER SACKS FOR
CARBON BLACK**

UDC 621.798.151.676.821.43 661.666.4



© Copyright 1986

**INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002**

**AMENDMENT NO. 2 MARCH 2006
TO
IS 11324 : 1985 SPECIFICATION FOR
MULTY-PLY PAPER SACKS FOR CARBON BLACK**

[*Page 5, Table 1, Sl No. (iv)*] — Substitute the following for the existing matter:

iv) Tear factor	MD	100 <i>Min</i>	12.7 of IS 1060 (Part 1) : 1966
	CD	120 <i>Min</i>	

(CHD 15)

Reprography Unit, BIS, New Delhi, India

AMENDMENT NO. 1 MARCH 1997
TO
IS 11324 : 1985 SPECIFICATION FOR MULTI-PLY
PAPER SACKS FOR CARBON BLACK

(*Page 3, clause 0.2*) — Insert the following new clause after 0.2 and renumber the subsequent clause:

‘0.3 A scheme for labelling environment friendly products known as ECO Mark has been introduced at the instance of the Ministry of Environment and Forests (MEF), Government of India. The ECO Mark would be administered by the Bureau of Indian Standards (BIS) under the *BIS Act*, 1986 as per the Resolutions No. 71 dated 21 February 1991, and No. 425 dated 28 October 1992, published in the Gazette of the Government of India. For a product to be eligible for marking with ECO logo, it shall also carry the ISI Mark of BIS besides meeting additional environment friendly requirements. For this purpose, the Standard Mark of BIS would be a single mark being a combination of the ISI Mark and the ECO logo. Requirements to be satisfied for a product to qualify for the BIS Standard Mark for ECO friendliness, will be included in the relevant published Indian Standards through an Amendment. These requirements will be optional; manufacturing units will be free to opt for the ISI Mark alone also.

This Amendment is based on the Gazette Notification No. 364 dated 7 September 1995 for packaging material/package (Part I Paper Board and Plastics excluding Laminates) as environment friendly products published in the Gazette of India. This Amendment is, therefore, being issued to this standard to include environment friendly requirements for multi-ply paper sacks for carbon black.'

(*Page 6, clause 8.4*) — Insert the following new clauses after 8.4 and renumber the subsequent clauses:

‘9 ADDITIONAL REQUIREMENTS FOR ECO MARK

9.1 General Requirements

9.1.1 The product shall conform to the requirements for quality and performance prescribed under 3 to 8.

9.1.2 The paper and paper boards used for the manufacture of packaging materials/packages shall comply with the relevant Indian Standards.

Amend No. 1 to IS 11324 : 1985

9.1.3 The manufacturer shall produce to BIS, the environmental consent clearance from the concerned State Pollution Control Board as per the provisions of *Water (Prevention and Control of Pollution) Act, 1974* and *Air (Prevention and Control of Pollution) Act, 1981* along with the authorization, if required, under the *Environment (Protection) Act, 1986* and the Rules made thereunder, while applying for ECO Mark.

9.2 Specific Requirements

9.2.1 The material shall be of the following two types depending on the raw material used in the manufacture:

- a) *Type A* — Manufactured from pulp made from 100 percent waste paper or agricultural/industrial waste.
- b) *Type B* — Manufactured from pulp containing not less than 60 percent by mass of pulp made from materials other than bamboo, hardwood, softwood and reed.

NOTE — The manufacturer shall provide documentary evidence by way of certificate or declaration to this effect to BIS while applying for ECO mark for requirements under (a) and (b) above.'

[*Page 6, clause 9.1.2 (renumbered as 10.1.2)*] — Insert the following new clauses after 10.1.2:

'10.1.3 Additional Requirements for ECO Mark

10.1.3.1 Each sack may display in brief the criteria for which the product has been labelled as environment friendly.

10.1.3.2 It shall be suitably marked on each sack that ECO Mark label is applicable only to the packaging material/package if content is not separately covered under the ECO Mark scheme.

NOTE — It may be stated that the ECO Mark is applicable to the product or packaging material or both.'

[*Page 7, clause 10.1 (renumbered as 11.1)*] — Insert the following new clause after 11.1:

'11.2 The ECO marked packaging material/package may be sold along with instructions for proper use and mode of safe disposal so as to maximise its performance and minimise wastage.'

(CHD 16)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR MULTY-PLY PAPER SACKS FOR CARBON BLACK

Paper and Flexible Packaging Sectional Committee, MCPD 14

Chairman

SHRI K. VISWANATHAN

Representing

Jardine Henderson Ltd, Calcutta

Members

DR S. R. AGARWAL	Glaxo (Laboratories) India Ltd, Bombay
SHRI S. M. KHAN (<i>Alternate</i>)	
SHRI A. B. AJMERA	Card Board Box Manufacturing Co, Calcutta
SHRI C. B. AJMERA (<i>Alternate</i>)	
SHRI B. D. AMAR	Metal Box India Ltd, Calcutta
DR S. LAKSHMANAN (<i>Alternate</i>)	
SHRI A. L. ANNAMALAI	Federation of Corrugated Box Manufacturers' of India, Bombay
SHRI M. D. SHAH (<i>Alternate</i>)	
SHRI VIDYA CHARAN BHARGAVA	Directorate of Plant Protection (Ministry of Agriculture), Faridabad
SHRI S. K. GHOSH (<i>Alternate</i>)	
WG CDR V. B. BHATIA	Ministry of Defence (DGI), Kanpur
SHRI J. K. SINHA (<i>Alternate</i>)	
SHRI ANUP BANERJEE	Solid Containers Ltd, Bombay
SHRI S. K. SURI (<i>Alternate</i>)	
SHRI S. CHAKRABORTI	Hindustan Lever Ltd, Bombay
SHRI V. DHAWAN (<i>Alternate</i>)	
SHRI B. D. CHATTERJEE	Indian Petrochemicals Corporation Ltd, Vadodara
SHRI P. R. SESHAH (<i>Alternate</i>)	
DR S. S. GUPTA	Bayer (India) Ltd, Bombay
DR P. V. RAIKER (<i>Alternate</i>)	
DR R. JAYARAM	Federation of Biscuit Manufacturers' of India, Delhi
JOINT DIRECTOR, TRAFFIC COM- MERCIAL RATES	Railway Board (Ministry of Railways), New Delhi
SHRI N. P. KAPADIA	Larsen & Toubro Ltd, Bombay
SHRI R. P. SOOCHAK (<i>Alternate</i>)	
SHRI N. L. KASTURIA	Tata Engineering & Locomotive Co Ltd, Pune
SHRI C. T. D'SOUZA (<i>Alternate</i>)	

(*Continued on page 2*)

© Copyright 1986

INDIAN STANDARDS INSTITUTION

This publication is protected under the *Indian Copyright Act (XIV of 1957)* and reproduction in whole or in part by any means except with written permission of the publisher shall be deemed to be an infringement of copyright under the said Act.

IS : 11324 - 1985

(*Continued from page 1*)

<i>Members</i>	<i>Representing</i>
SHRI K. V. KRISHNAMURTHY SHRI A. DASS (<i>Alternate</i>)	ITC Limited, Calcutta
SHRI M. M. MENON SHRI M. KRISHNA RAO (<i>Alternate</i>)	The Andhra Pradesh Paper Mills Ltd, Rajahmundry
SHRI A. L. MUTHIAH SHRI A. L. ANNAMALAI (<i>Alternate</i>)	India Packaging Products Pvt Ltd, Bangalore
SHRI N. MADHAVAN NAIR SHRI P. V. NARAYANAN SHRI A. K. SENGUPTA (<i>Alternate</i>)	Kesoram Rayons, Calcutta Indian Institute of Packaging, Bombay
DR A. N. NAYER SHRI SANJAY K. NAYER (<i>Alternate</i>)	Scan Packaging Consultancy Service, New Delhi
SHRI S. G. RAMGAN DR A. R. K. RAO (<i>Alternate</i>)	Seshasayee Paper and Boards Ltd, Erode
SHRI M. K. RAMASAMI SHRI R. MUTHIAH (<i>Alternate</i>)	Jayant Packaging Pvt Ltd, Madras
SHRI C. V. N. RAO	Office of the Development Commissioner, Small Scale Industries (Ministry of Industry), New Delhi
SHRI A. RAY SHRI S. P. CHATTERJEE (<i>Alternate</i>)	India Foils Limited, Calcutta
SHRI M. B. SINGH	Directorate of Standardization, Ministry of Defence (R & D), New Delhi
SHRI O. P. SRIVASTAVA (<i>Alternate</i>)	
SHRI R. C. TANDON SHRI B. L. RAINA, Director (MCPD)	Forest Research Institute and Colleges, Dehra Dun Director General, ISI (<i>Ex-officio Member</i>)

Secretary
SHRI A. R. GULATI
Joint Director (MCPD), ISI

Boxes, Drums and Containers Subcommittee, MCPD 14:2

Convener
SHRI A. B. AJMERA Card Board Box Mfg Co, Calcutta

<i>Members</i>	
SHRI C. B. AJMERA (<i>Alternate</i> to Shri A. B. Ajmera)	
SHRI ANUP BANERJEE SHRI A. K. BHATTACHARYA (<i>Alternate</i>)	Solid Containers Ltd, Bombay
SHRI B. BHATTACHERJEE	Corrugating & Paper Processing Co Pvt Ltd, Calcutta
SHRI S. MITRA (<i>Alternate</i>)	
SHRI L. N. BURMAN SHRI S. CHAKRABARTI SHRI B. DHAWAN (<i>Alternate</i>)	Indian Paper Makers Association, Calcutta Hindustan Lever Ltd, Bombay

(*Continued on page 8*)

Indian Standard

**SPECIFICATION FOR
MULTY-PLY PAPER SACKS FOR
CARBON BLACK**

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 27 May 1985, after the draft finalized by the Paper and Flexible Packaging Sectional Committee had been approved by the Marine, Cargo Movement and Packaging Division Council.

0.2 A paper sack is the most commonly used medium for packaging of carbon black. The selection of the type of paper, manufacturing practices, and co-relation of the quality of the paper to the strength characteristics are of utmost importance in arriving at a sack to the satisfaction of the consumer industry. The various properties of kraft paper for use of the pack sacks has been laid down in Table 1. However, any other type of kraft paper meeting with the strength values as laid down in Table 1 may be used in the manufacture of paper sacks.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS:2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard lays down the requirements for materials, design and construction for non-returnable multi-ply paper sacks intended to hold 25 kg of carbon black in powder form.

2. TERMINOLOGY

2.1 For the purpose of this standard the definitions given in IS:9028-1978† shall apply.

*Rules for rounding off numerical values (revised).

†Glossary of terms relating to paper sacks.

3. DIMENSIONS

3.1 The width and length of the sack shall be as specified by the purchaser. The tolerance on the specified value shall be ± 6 mm.

4. MATERIAL

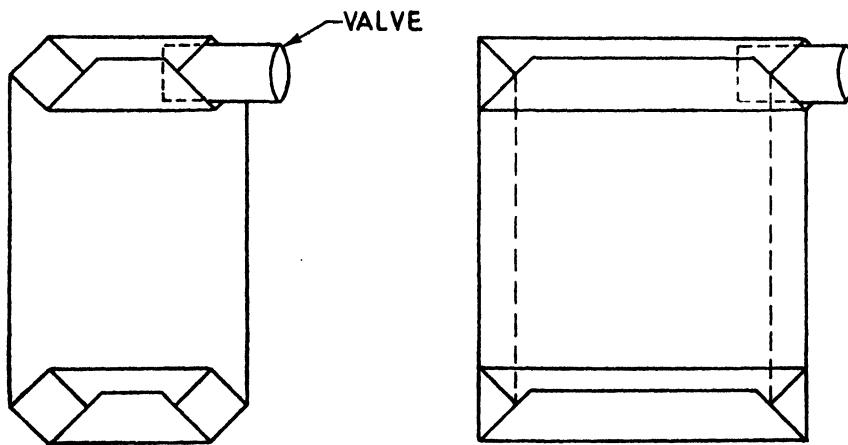
4.1 The sacks shall be made of sack kraft paper, extensible sack kraft or creped kraft paper.

4.2 Adhesive — Adhesive shall be borated starch or dextrin base type and shall be non fungi forming.

5. CONSTRUCTION

5.1 General — The sack shall comprise four or five well nested plies of kraft paper of 80 or 90 g/m² (substance).

5.2 Style — The sacks shall be of pasted valve, flat, hexagonal ends type or pasted valve, gussetted rectangular ends type as shown in Fig. 1A and 1B respectively. The valve may be fitted with an external tuck in sleeve, normally or crepe kraft paper of 90-100 g/cm².



**1A PASTED VALVE, FLAT,
HEXAGONAL ENDS TYPE SACK**

**1B PASTED VALVE, GUSSETTED,
RECTANGULAR ENDS TYPE SACK**

FIG. 1 SACK STYLE

5.3 Seams — The longitudinal seams shall be glued by a suitable adhesive as specified under 4.2.

6. KRAFT PAPER REQUIREMENTS

6.1 The various requirements of kraft paper shall be as given in Table 1.

TABLE 1 REQUIREMENTS FOR 80 g/m² SACK KRAFT PAPER
(Clauses 0.2, 6.1 and 6.1.1)

SL No.	REQUIREMENT	DIREC- TION	VALUE	METHOD OF TEST, REF TO CLAUSE NO.
i)	Substance (g/m ²)	—	80±4	6.2 of IS:1060 (Part 1)-1966*
ii)	Tensile strength (N/15 mm)	MD	75 Min	12.3 of IS:1060 (Part 1)-1966*
		CD	50 Min	
iii)	Elongation (percent) at break	MD	2.5 Min	12.3 of IS:1060 (Part 1)-1966*
		CD	4.5 Min	
iv)	Tear factor	MD	100 Min	12.7 of IS:1060 (Part 1)-1966*
			120 Min	
v)	Porosity sec/100 cc (Gurley)	—	20 Max	Appendix A of IS:3413-1977†

MD means machine direction, and

CD means cross direction.

*Methods of sampling and test for paper and allied products: Part 1 (revised).

†Base paper for carbon paper.

6.1.1 The values specified in Table 1 are for conventional type sack kraft paper. If extensible sack kraft paper is used, it is desirable to go for tensile energy absorption value of 137 and 68.5 J/m² in machine direction and cross direction respectively. The porosity value for extensible sack kraft remains the same as indicated in Table 1.

7. WORKMANSHIP

7.1 The plies shall be properly but not excessively creased. In the construction of a multiwall sack tube, the outer ply fit shall be such that at the point of manufacture each ply shall be smaller in circumference than the next outer ply within the elongation limits of the material in order to ensure even load distribution between the plies. Care shall be taken to ensure for adequate longitudinal overlap, equal gusset formation and spot gluing quantity and line of gluing.

8. SAMPLING AND TESTING

8.1 Sampling — Sampling shall be according to procedure laid down in IS: 10528-1983*.

8.2 Conditioning — The paper sack sample from the lot for testing shall be conditioned according to IS: 1060 (Part 1)-1966†.

8.3 Substance — The substance of sack kraft paper shall be within ± 5 percent of the specified nominal substance (grammage) when determined by the method described in 6.2 of IS: 1060 (Part 1)-1966†.

8.4 Drop Test — The filled sacks after conditioning as required shall be subjected to sequential 6 drops, one each on front side, right side, back side, left side, bottom and top (*see IS: 11052-1984‡ for details*). The drop height shall be 0.85 m for the first four drops and 0.3 m for drop on the bottom and top sides (filling side). The sack shall not show any bursting at the end of the drop test.

9. MARKING

9.1 The sacks shall be printed according to the international colour coding followed by the carbon black industry. A glossy paper strip may be pasted at the ends of the bag.

9.1.1 Each sack shall be marked with the following information printed on it:

- a) Relevant product details alongwith the name of the product manufacturer;
- b) Net mass of the contents; and
- c) 'Do not use hooks' [preferably showing the corresponding pictorial illustrations as per IS: 1260 (Part 2)-1979§].

9.1.2 The sacks may also be marked with the following information:

- a) 'Do not drop' [preferably showing the pictorial illustrations according to IS: 1260 (Part 2)-1979§];
- b) 'Do not drop on edges, corners and ends' [preferably showing the corresponding pictorial illustration as per IS: 1260 (Part 2)-1979§]; and

*Method of sampling empty paper sacks for testing.

†Method of sampling and test for paper and allied products: Part 1 (*revised*).

‡Methods of test for the vertical impact drop test on paper sacks.

§Specification for pictorial marking for handling and labelling of goods: Part 2 General goods (*second revision*).

c) The sacks conforming to the requirements of this standard may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act and the Rules and Regulations made thereunder. The ISI mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard under a well-defined system of inspection, testing and quality control which is devised and supervised by ISI and operated by the producer. ISI marked products are also continuously checked by ISI for conformity to that standard as a further safeguard. Details of conditions under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

10. PACKING

10.1 Paper sacks shall be bundled and suitably packed in waterproof material as agreed to between the purchaser and the supplier.

(*Continued from page 2*)

<i>Members</i>	<i>Representing</i>
SHRI S. L. CHAUDHRY	Federation of Corrugated Box Mfrs of India, Bombay
SHRI R. MUTHIAH (<i>Alternate</i>)	
SHRI T. GANGADHARAN	Indian Explosives Ltd, Calcutta
SHRI R. KRISHNAN (<i>Alternate</i>)	
SHRI G. C. JAIN	Ashok Paper Mills Ltd, Calcutta
SHRI G. C. JAIN	Punalur Paper Mills Ltd, Punalur
SHRI P. N. KALRA	Ministry of Railways (Railway Board), New Delhi
SHRI U. B. KANCHAN	Directorate of Standardization (Ministry of Defence), New Delhi
SHRI A. K. SINGH (<i>Alternate</i>)	
SHRI K. S. KRISHNAMACHARI	Seshasayee Paper & Boards Ltd, Erode
SHRI V. R. KRISHNAMOORTHY	Glaxo (Laboratories) India Ltd, Bombay
SHRI K. V. KRISHNAMURTHY	ITC Limited, Calcutta
SHRI A. DASS (<i>Alternate</i>)	
SHRI KAMAL MEATTLE	Unisystem Pvt Ltd, Faridabad
SHRI M. M. MENON	The Andhra Pradesh Paper Mills Ltd, Rajahmundry
SHRI A. L. MUTHIAH	India Packaging Products Pvt Ltd, Bangalore
SHRI A. L. ANNAMALAI (<i>Alternate</i>)	
SHRI NITIN J. NANAVATY	Apurva Containers Pvt Ltd, Ahmadabad
SHRI V. B. SHAH (<i>Alternate</i>)	
SHRI P. V. NARAYANAN	Indian Institute of Packaging, Bombay
DR A. N. NAYER	Scan Packaging Consultancy Service, New Delhi
SHRI SANJAY K. NAYER (<i>Alternate</i>)	
SHRI A. V. RAMARAO	Indian Drugs & Pharmaceuticals Ltd, New Delhi
DR D. K. MUZUMDAR (<i>Alternate</i>)	
SHRI M. K. RAMASAMI	Jayant Packaging Pvt Ltd, Madras
SHRI B. A. SHAH	Saurashtra Packaging Pvt Ltd, Bombay
SHRI M. K. MEHTA (<i>Alternate</i>)	
SHRI H. D. SREENATH	Laxmi Board and Paper Mills Pvt Ltd, Kalyan
DR RAVI TALWAR	The Paper Products Ltd, Bombay
SHRI R. C. TANDON	Forest Research Institute & Colleges, Dehra Dun
SHRI P. VEERRAJU	Central Food Technological Research Institute (CSIR), Mysore
SHRI A. R. VIJAYENDRA RAO (<i>Alternate</i>)	
SHRI E. R. VICCAJEE	Warden & Co Pvt Ltd, Bombay

Ad Hoc Panel for Working on Draft Indian Standard Specification for Multi-Ply Paper Sacks for Carbon Black

<i>Convenor</i>	
SHRI E. R. VICCAJEE	Warden & Company (India) Pvt Ltd, Bombay
<i>Members</i>	
SHRI C. B. BAMBAWALE	Oriental Carbons & Chemicals Ltd, Ghaziabad
SHRI P. K. BYAHATTI	Central Pulp Mills Ltd, Pune
SHRI V. M. KAMAT	Gujarat Carbon Ltd, Vadodara
SHRI O. P. MALHOTRA	Phillips Carbon Black Ltd, Calcutta
SHRI P. V. NARAYANAN	Indian Institute of Packaging, Bombay
SHRI R. S. WAGLE	Narmada Cement Co Ltd, Bombay



INDIAN STANDARDS INSTITUTION

Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, NEW DELHI 110002

Telephones: 3 31 01 31, 3 31 13 75

Telegrams: Manaksantha
(Common to all Offices)

Regional Offices:

Telephones

*Western : Manakalaya, E9 MIDC, Marol, Andheri (East), BOMBAY 400093	6 32 92 95
†Eastern : 1/14 C. I. T. Scheme VII M. V. I. P. Road, Maniktola, CALCUTTA 700054	36 24 99
Southern : C. I. T. Campus, MADRAS 600113	41 24 42
Northern : SCO 445-446, Sector 35-C, CHANDIGARH 160036	{ 2 18 43 { 3 16 41

Branch Offices:

'Pushpak', Nurmohamed Shaikh Marg, Khanpur, AHMADABAD 380001	{ 2 63 48 { 2 63 49
'F' Block, Unity Bldg, Narasimharaja Square, BANGALORE 560002	22 48 05
Gangotri Complex, Bhadbhada Road, T. T. Nagar, BHOPAL 462003	6 27 16
22E Kalpana Area, BHUBANESHWAR 751014	5 36 27
53/5, Ward No. 29, R.G. Barua Road, 5th Byelane, GUWAHATI 781003	—
5-8-56C L. N. Gupta Marg, HYDERABAD 500001	22 10 83
R14 Yudhister Marg, C Scheme, JAIPUR 302005	6 98 32
117/418 B Sarvodaya Nagar, KANPUR 208005	4 72 92
Patliputra Industrial Estate, PATNA 800013	6 23 05
Hantex Bldg (2nd Floor), Railway Station Road, TRIVANDRUM 695001	32 27

Inspection Office (With Sale Point):

Institution of Engineers (India) Building, 1332 Shivaji Nagar,
PUNE 411005 5 24 35

*Sales Office in Bombay is at Novelty Chambers, Grant Road,
Bombay 400007 89 65 28

†Sales Office in Calcutta is at 5 Chowringhee Approach, P. O. Princep
Street, Calcutta 700072 27 68 00